AMENDMENTS TO THE CLAIMS

Please amend the claims as they currently stand so that they are in accord with the following listing of the claims:

Claims 1-27 (cancelled)

Claim 28 (currently amended): A method to optimize a welding energy input into a heating coil of a heating coil fitting involving a welding power supply, which is connected to contact elements and connecting elements of a heating coil fitting via connecting leads and connecting elements, and in which an effective value of an AC welding voltage with a defined fundamental frequency and a corresponding welding time are known, said method comprising:

measuring at least one electrical parameter of the heating coil fitting wherein an inductance of the heating coil of the heating coil fitting is measured as a first electrical parameter;

determining at least [[one]] a first energy input correction factor at least from the ~~at least one~~ measured first electrical parameter of the heating coil fitting; and

controlling ~~an optimal~~ a welding energy input into the heating coil fitting using at least the ~~at least one~~ first energy input correction factor to adjust one or several welding parameters, respectively.

Claim 29 (previously presented): The method of claim 28, wherein the welding power supply provides the heating coil fitting with a DC welding voltage.

Claim 30 (previously presented): The method of claim 28, wherein the welding power supply provides the heating coil fitting with an AC welding voltage, which has a fundamental frequency outside a tolerance range for a fundamental frequency of an established AC welding voltage for the heating coil fitting.

Claim 31 (previously presented): The method of claim 28, wherein the energy input correction factor comprises at least one inductance correction factor, which is provided to take into account an influence on the welding energy input of the heating coil inductance of the heating coil fitting in case of a deviation from a tolerance range for a fundamental frequency of an established AC welding voltage for the heating coil fitting.

Claim 32 (previously presented): The method of claim 28, wherein the energy input correction factor comprises at least one harmonics correction factor, which is designed to take into account a difference in welding energy input due to harmonics of an AC welding voltage in case of a deviation from a tolerance range for a fundamental frequency of an established AC welding voltage for the heating coil fitting.

Claim 33 (previously presented): The method of claim 28, wherein the energy input correction factor comprises at least one resistance correction factor, which is designed to correct for an impact on the welding energy input due to a temperature dependency of an ohmic resistance of the heating coil in the heating coil fitting.

Claim 34 (previously presented): The method of claim 28, wherein at least one parameter or several electrical parameters, respectively, for the heating coil fitting are measured before the welding process.

Claim 35 (previously presented): The method of claim 28, wherein at least one parameter or several electrical parameters, respectively, for the heating coil fitting are measured during the welding process.

Claim 36 (previously presented): The method of claim 35, wherein at least one parameter or several parameters, respectively, for the heating coil fitting are measured during the welding process either continuously or in defined time intervals.

Claim 37 (previously presented): The method of claim 28, wherein an ohmic resistance is measured as a second electrical parameter for the heating coil of the heating coil fitting.

Claim 38 (previously presented): The method of claim 28, wherein an established welding time as a welding parameter is adjusted by means of the energy input correction factor for each individual welding process.

Claim 39 (previously presented): The method of claim 28, wherein using the energy input correction factor and a known effective value for an AC welding voltage, the effective AC welding voltage for an AC welding voltage with a fundamental frequency, which is different from a fundamental frequency of an established AC welding voltage, or for a DC welding voltage, respectively, as a welding parameter is adjusted for each individual welding process.

Claim 40 (previously presented): The method of claim 28, wherein there is a tolerance range of about 25 Hz to 75 Hz for a fundamental frequency of an AC welding voltage that is established for the heating coil fitting.

Claim 41 (previously presented): The method of claim 28, wherein the inductance of the heating coil is determined using a phase angle between a current and a voltage of an AC measurement signal, which is applied to the heating coil fitting.

Claim 42 (previously presented): The method of claim 28, wherein the inductance is measured via a change in a resonant frequency in a resonant measurement circuit connected to the heating coil of the heating coil fitting.

Claim 43 (previously presented): The method of claim 28, wherein the inductance is determined using a change in complex heating coil resistance of the heating coil fitting for at least two measurement signals with different frequencies.

Claim 44 (previously presented): The method of claim 28, wherein the electrical parameters are measured via separate measurement lines, which can be connected to the contact elements of the heating coil fitting.

Claim 45 (previously presented): The method of claim 28, wherein the electrical parameters are measured via the connecting leads of the welding power supply at the contact elements of the heating coil fitting.

Claim 46 (currently amended): A heating coil welding unit, said heating coil welding unit comprising:

at least one welding power supply;

at least two connecting lines which are connected to the welding power supply, the connecting lines each having a connecting element and being detachably connectable via the welding power supply to contact elements of a heating coil of a heating coil fitting;

a control unit operationally connected to said welding power supply and comprising at least one central control component;

at least one input device operationally connected to said central control component to input established welding parameters into said control unit;

wherein the central control component is operationally connected with at least one device to measure at least one electrical heating coil parameter of the heating coil fitting, wherein a heating coil inductance is measured as a first electrical parameter for the heating coil fitting, and wherein the central control component is configured to ~~designed~~

[[to]] determine at least from the ~~at least one~~ measured first electrical parameter an energy input correction factor,

[[to]] adjust one or several welding parameters, respectively, by means of the energy input correction factor, ~~and~~

~~to regulate an~~ thus controlling a welding energy input into the heating coil fitting.

Claim 47 (previously presented): The heating coil welding unit of claim 46, wherein a second electrical parameter comprises an ohmic heating coil resistance for the heating coil fitting.

Claim 48 (previously presented): The heating coil welding unit of claim 46, wherein at least one of the one or several welding parameters to be adjusted is either an effective AC welding voltage, a DC voltage, or a welding time.

Claim 49 (previously presented): The heating coil welding unit of claim 46, wherein the established welding parameters are read from a label on the heating coil fitting.

Claim 50 (previously presented): The heating coil welding unit of claim 49, wherein the established welding parameters are provided as barcode on the label of the heating coil fitting and, therefore, a device to read and input at least the welding parameters into the central control component is a barcode reader.

Claim 51 (previously presented): The heating coil welding unit of claim 46, wherein the welding voltage is a DC voltage.

Claim 52 (previously presented): The heating coil welding unit of claim 46, wherein the welding voltage is an AC voltage with a fundamental frequency, which differs from a fundamental frequency of the established AC welding voltage for the heating coil fitting.